Platelet Storage System Manual

Models PC900, PC1200

Version N

English

HELMER LABS, INC. 15425 HERRIMAN BLVD., NOBLESVILLE, IN 46060 USA
PHONE (317) 773-9073 FAX (317) 773-9082
USA and CANADA
1-800-743-5637

Operation Manual

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Installation

1) Carefully unpack your Helmer Platelet Incubator.

2) Select a location keeping the following in mind:

    1) Allow 4 inches (10 cm) of air space above and at the back of the unit for adequate air circulation. Do not push the unit tight against a back wall.
    2) Use a grounded outlet with adequate power specifications as listed on the specifications label on the back of the unit.
    3) Keep away from direct sunlight or high temperature areas.

3) Turn the power switch to "**I**" (ON) and allow the chamber temperature to stabilize (30 minutes) at the factory preset controller values. While waiting for the chamber temperature to stabilize, carefully continue reading through the instruction manual.

4) Open the door to the chart recorder and connect the leads to the 9 volt battery.

5) Insert an approved, calibrated thermometer on the top shelf of your flatbed platelet agitator or to the exterior frame of the storage basket on your platelet rotator.

6) To install platelet agitators, open the incubator door and carefully place the platelet agitator onto the center of the incubator. Plug the platelet agitator power cord into the outlet located on the back wall of the incubator. Make sure that the power cord is properly secured to prevent cord damage. Turn the platelet agitator power switch to the on position and verify that it is centered within the drawer.

A gas cylinder controls the closing of the chamber door. DO NOT force the door to close faster than it does by itself. Doing so could damage the cylinder.

-Labeling

(Figure 0.1) - The maximum amperage rating for the interior chamber outlet, located in the back wall of the chamber (1), is 0.5 amps. Do not plug any device into the outlet that exceeds this rating.

Controls and Components

Control Panel: The main control panel is located in the upper right hand corner of the unit and contains the following:

See Figure 1.1 in the Appendix for locations of components referenced below.

Digital Controller (1): Provides visual readouts and controlling of the chamber temperature, alarms and other pertinent functions. All settings and calibration inputs are made through the controller touch buttons.

Audible Alarm (2): Generates a tone when activated, signaling an alarm condition.

Main Power Switch (3): Controls all electrical current to the unit. When the switch is turned to "**I**" (ON) the refrigeration, heating, fans and electrical systems become operative. All unit functions are shut down when the main power switch is turned to "**O**" (OFF).

Alarm Interrupt Button (4): Pressing this button when the audible high/low alarm has sounded will temporarily silence the audible alarm by resetting the alarm time delay period.

Audible Alarm Shutoff Switch (5): The audible alarm can be silenced with the key activated shutoff switch. The unit is shipped with the switch in the "**O**" (alarm OFF) position. Turn the switch to the "**I**" (alarm ON) position to activate the alarm.

Refrigeration and Heating System: The chamber is cooled by a refrigeration system in which the compressor unit runs continuously. A heater is turned on by the controller system to maintain the proper set temperature.

Thermostat Switch: A high temperature switch is mounted behind the interior back wall to discontinue power to the heater in the event of heating circuit failure.

Temperature and Alarm Systems

A. Digital Temperature Controller

Your Helmer system incorporates a digital controller system and RTD sensor to accurately control the temperature of the chamber. The controller system provides visual readouts of the chamber operating temperature, alarm system, heater output, and other functions. All temperature, calibration, and alarm settings are made through the controller touch buttons.

See Figure 2.1 in the appendix for locations of the items referenced below.

Heater On Indicator (1): This small round light labeled "1", will light whenever the controller sends power to the heater. This indicator will light on and off continuously during normal use.

Alarm Indicator (2): When the controller senses that the chamber temperature has exceeded the high or low alarm limit the Alarm Indicator, labeled as "2", will illuminate. The audible alarm is delayed for the period of time set by the Alarm Timer Delay. The adjustable Alarm Timer Delay prevents unnecessary warnings that may be caused by temporary temperature fluctuations when opening the doors.

Down Button (▼) (3): Used to decrease the controller digit values in conjunction with the **SET** button and to enter into the program functions in conjunction with the ▲ button.

Up Button (▲) (4): Used to increase the controller digit values in conjunction with the **SET** button and to enter into the program functions in conjunction with the ▼ button.

SET Button (5): Used to display the set temperature and to display the program function values.

B. Accessing the Chamber Set Temperature

To alter the chamber temperature setting:

1) (Figure 3.1) This is the normal display of the current temperature reading.

2) (Figure 3.2) Press and hold the **SET** button to display the current set temperature value.

3) (Figure 3.3) While holding the **SET** button down, press either the ▲ or ▼ button to alter the set value as desired. (If the set value will not change, the Set Point Lockout is in the lockout mode. To unlock this program value refer to "Accessing the Set Point Lockout" in the Controller Lockout section of the Maintenance and Service manual.)

4) Release the **SET** button to complete the chamber temperature setting change.

C. Accessing the Low and High Alarm Programs.

To alter the Low and/or High Alarm settings:

1) (Figure 4.1) Press and hold the ▲ and ▼ buttons until a controller program is displayed. (If the "**CnFg**" prompt appears, the Controller Program Lockout will need to be unlocked. To unlock this program value refer to "Accessing the Controller Program Lockout" in the Controller Lockout section of the Maintenance and Service manual.)

2) (Figure 4.2) Press the ▼ button until the "**ALO**" program appears for the Low Alarm, or "**Ahl**" for the High Alarm program.

3) (Figure 4.3) While holding the **SET** button down, press the ▲ or ▼ button to alter the alarm value as desired.

4) (Figure 4.4) To exit back out to the main operating mode, release the **SET** button and press both the ▲ and ▼ buttons until the operating temperature appears on the digital display.

D. Alarm Timer Delay

The temperature alarm has a variable delay setting, which can be changed to set the length of time desired before activating the audible and central alarm relays. The time can be set from approximately 0 to 8 minutes. You can access this feature by removing the top panel on the rear of the unit. The adjustment is made through the dial located on the internal circuit board (Figure 5.1). Turning the dial to its extreme clockwise position sets the delay time to 8 minutes. Turning the dial to its extreme counter-clockwise position sets the delay time to 0 minutes.

E. Power Failure Alarm

In the event of a power interruption the audible alarm will sound and the central alarm relay will activate. To disable this alarm use the keylock switch located on the front control panel of the unit. It is recommended to place the key for this switch in a location separate from the switch.

Disabling the power failure alarm also disables the audible portion of the temperature alarm. However, in this disabled mode the number 2 light on the controller and the central alarm output are still functional.

Quality Control

A. Calibration of Digital Controller

To verify that the digital temperature controller is calibrated correctly allow the chamber temperature to stabilize and then take a temperature reading from a calibrated thermometer inside the chamber. (If the incubator has a flatbed agitator then locate the thermometer on the top shelf of the agitator. If it has a rotating agitator then locate the thermometer on the outside of the rotating basket.) The temperature controller is calibrated correctly if the thermometer reads the same as the controller display. The temperature controller needs to be calibrated if there is a temperature variance.

As an example, if a calibrated thermometer reads 21.0ºC and the Temperature Controller reads 22.0ºC, then the controller display ("**CAL**" function) needs to be reduced by 1.0ºC. If the thermometer reads 23.0ºC and the Temperature Controller reads 22.0ºC, then the controller display ("**CAL**" function) needs to be increased by 1.0ºC.

To recalibrate the Temperature Controller:

1) (Figure 7.1) Press and hold the ▲ and ▼ buttons until a controller program is displayed. (If the "**CnFg**" prompt appears first, the Controller will need to be unlocked. To unlock this program value refer to "Accessing the Program Lockout" in the Controller Lockout section of the Maintenance and Service manual.)

2) (Figure 7.2) Press the ▼ button until the "**Pid**" Menu prompt appears.

3) (Figure 7.3) While pressing the **SET** button (the digital readout will display "**no**"), press the ▼ button to display "**yes**", and then release the **SET** button.

4) (Figure 7.4) Press the ▲ button once to display the "**CAL**" prompt.

5) (Figure 7.5) While holding the **SET** button down, press either the ▲ or ▼ button to alter the calibration program value.

6) (Figure 7.6) To exit back to the main operating mode, release the **SET** button and press the ▲ and ▼ buttons simultaneously until the operating temperature appears on the digital display.

After making any calibration changes to the Temperature Controller allow the chamber temperature to stabilize and make a new reading to verify that the controller is properly calibrated. Make any additional adjustments as needed until the controller readout is properly calibrated.

B. Alarm System Test

To test for proper functioning of the High and Low Alarm System it is important to follow methods that may be recommended by the AABB or other governing organizations for such alarm system checks. A suggested method to activate an actual alarm test condition is as follows:

1) (Figure 8.1) Open the RTD sensor enclosure and place a small cup with water that is at least 1ºC beyond the alarm setting in front of the unit.

2) Carefully pull the RTD sensor out of the holding bracket and place it in the cup. The temperature sensitive portion of the sensor is located within 1 cm from the tip of the sensor.

3) Watch for the alarm indicator light on the Temperature controller to illuminate when the temperature reading passes the alarm set point. The audible alarm will then go into the delay mode and sound after the delay period has cycled.

4) Carefully place the RTD sensor back into the holding bracket.

Caution

When the RTD sensor is placed into the water the control system will be responding as if the chamber temperature is the temperature of the water. As a result, the system will adjust to this input accordingly and the actual temperature of the chamber will change. Be careful not to expose any platelets in the chamber to an extended period of varying temperatures.

Specifications

Weight:	PC900: 72 kg PC1200: 94 kg
Input Power:	115 / 230 V~, 50/60 Hz
Consumption:	1035 VA Includes the load from standard agitators placed inside the chamber.
Circuit Breakers:	115 V: 12 A
Fuses:	230 V: 6.3 A "T"
Size:	PC900: 67 cm (W) x 79 cm (H) x 70 cm (D) PC1200: 103 cm (W) x 79 cm (H) x 70 cm (D)
Operating Temperature:	+5 up to +35^{o}C

This device complies with CSA standard 151 and UL standard 1252 for construction and electrical safety.

Description of Symbols

CE - Conforms to 93/42/EEC

- Date of Manufacturing

Maintenance

It is recommended to conduct the following maintenance items to help keep your Helmer Platelet Incubator in good working condition*:*

Quarterly:	Clean condenser grill. Conduct alarm and calibration checks. Check the 9V-chart recorder battery.

Cleaning

The importance of proper cleaning of your Helmer Platelet Incubator cannot be under estimated. Lack of cleaning of items, such as the condensor fins, can significantly cut down on the life expectancy of this equipment.

Exterior - A soft cotton cloth and non-abrasive liquid cleaner should be used for cleaning the exterior surfaces. The doors should be cleaned with a soft cotton cloth and window cleaner. The black condensor fins located on the upper left side in the rear of the unit should be cleaned and vacuumed often.

Roll-Top Door - The clear portion of the roll-top door is made of a polycarbonate material, which is very durable but does scratch easily. Therefore, great care must be taken when cleaning this part of the unit. Lightly wipe the door with a clean and very soft cotton cloth - do not push hard when cleaning and do not rub back and forth across the door. Lightly wipe in one direction. If a cleaner must be used to clean debris off of the door then spray some window cleaner onto the clean rag and then wipe - do not spray the cleaner directly onto the clear part of the roll-top door.

Interior - Always turn the power switch off when cleaning the interior of the incubator. A disinfectant cleaner should be used to wipe down the inside stainless steel walls, drawer and interior water drain tray. This should be done on a regular basis or when leaking bags require you to clean the chamber.

Troubleshooting

The information in this section is for the benefit of the user in diagnosing certain issues. If the user cannot resolve a particular problem your service agent may use the more extensive Troubleshooting section in the Service Manual. Contact HELMER or your authorized service representative if more help is needed.

Electrical

Problem	Possible Cause	Action to be Taken
Unit does not turn on.	- Circuit breaker or fuse activated.	- Reset circuit breaker or replace fuse.
	- Faulty outlet connection.	- Verify outlet is good. Plug into a different outlet.
	- Faulty power cord.	- Verify proper cord connections. Change power cord.
	- Faulty power switch.	- Replace switch.
Platelet agitator not operating.	- Faulty platelet agitator.	- Verify that agitator is working properly.
Power cord on agitator rubbing.	- Agitator not centered in drawer.	- Verify positioning of agitator.
	- Power cord not mounted properly.	- Verify positioning of cord. Use clips on back wall to hold the power cord.
	- Agitator sliding in drawer.	- Clean any grease and debris in drawer. Verify agitator feet are in proper position and condition.

Alarms and Controller

Audible alarm not sounding.	- Not waiting for alarm delay to cycle.	- The alarm system has a delay system before the audible alarm will sound. Wait sufficient time for alarm delay to cycle.
	- Verify Alarm and Controller settings.	- The controller alarm value or other values may have been altered causing the non-alarm condition. Refer to the proper controller value settings and change accordingly.

Alarm sounding sporadically.	- Faulty alarm system.	- Verify proper operation of the controller, secondary circuit board and line connections.
	- Alarm deviation value set too tight.	- During normal operation the temperature will fluctuate as a result of many factors. If the alarm value is set too tight to the operating value the alarm may sound often. The alarm system is to warn of serious unit temperature fluctuations. Increase the alarm value.
	- Door not closing.	- Verify proper alignment of door closure.
	- Air gaps around door.	- Verify door gaskets are sealing properly.
	- Chamber temperature not stabilizing.	- Verify that the chamber temperature is maintaining a proper and consistent temperature. Refer to Quality Control section.
Alarm not activating at proper temperature.	- Calibrate controller.	- Refer to section on Calibration of the Digital Controller.
Controller setting not calibrated properly.	- Calibrate controller.	- Refer to section on Calibration of the Digital Controller.

Other

Ice lying in water tray.	- Refrigerant pressure is low.	- Verify refrigerant pressures. Add refrigerant as needed.
Severe water puddling in water tray.	- Drain hole plugged.	- Unclog drain hole.
	- Door not closing tight, allowing humid air into the chamber.	- Verify that door gasket is sealing and door is closing properly.
Water is puddling outside of the incubator.	- Drain pan leaks.	- Seal any leaks in drain pan with silicone.
	- Water is condensing on evaporator lines to the compressor.	- Apply additional cork tape to copper lines.
	- Excessive humidity.	- Water will accumulate more during humid periods. Make sure door is closing properly.
Platelets are "pooling" to one side of the bag.	- Unit not level.	- Verify that the unit is sitting level. Verify that agitators are sitting level.
Drawer does not slide easily.	- Debris in drawer slide.	- Pull drawers out and clean the slide channels.
	- Mounting screws loose.	- Verify drawer-mounting screws are tight.
	- Faulty drawer slide.	- Replace drawer slide.
Door does not open and close easily.	- Debris in hinges.	- Remove door and clean the pivot mounts.
	- Door closure not aligned.	- Verify proper positioning and alignment of closure with the door.
	- Faulty door closure.	- Replace door closure.

Limited Warranty

(USA and Canada)
The Helmer Platelet Incubators are warranted for one year for materials and labor at our factory.
(For all other countries contact your local distributor.)